

### **REMARKS/ARGUMENTS**

Applicant appreciates the consideration shown by the Office, as evidenced by the Office Action, mailed on 19 April 2005. In that Office Action, the Examiner rejected claims 1-3, 5-7, 9, 13, 21, 22, and 26 under 35 USC 103(a) over Takakado et al. US5237260 (hereinafter "Takakado") in view of Johnson Jr. US5852558 (hereinafter "Johnson") and Glennon US4507724; rejected claim 4 under 35 USC 103(a) on Takakado, Johnson, and Glennon, and further in view of Lakey et al. US4883973; rejected claim 14 under 35 USC 103(a) on Takakado, Johnson, and Glennon, and further in view of Geis et al., US5903116; rejected claims 10, 12, and 23 under 35 USC 103(a) on Takakado, Johnson, and Glennon and further in view of Stanton et al. US4179729; rejected claims 8 and 15 under 35 USC 103 (a) on Takakado, Johnson, and Glennon and further in view of Nguyen US6067237; and rejected claims 11 and 24 under 35 USC 103(a) on Takakado, Johnson, and Glennon and further in view of ordinary skill in art.

Claims 1-15, 21-24, and 25 remain under consideration in the present application. Applicant respectfully requests reconsideration of the application by the Examiner in light of the following remarks offered in response to the Office Action.

Applicant traverses the rejection of claims 1-3, 5-7,9, 13, 21, 22, and 26 under 35 USC 103(a) over Takakado, Johnson, and Glennon.

With respect to Takakado, as stated in the Office Action, Takakado does "not disclose explicitly showing the inverter having a neutral output." Additionally, and more specifically, Takakado does not describe an inductor directly coupling a leg of a multi-leg inverter to a neutral output. Each of the independent claims has a corresponding recitation.

claim 1: wherein in an operational mode, the combined rectifier and inverter provide generated power to the load port and generates a neutral output; and an inductor electrically coupling one of the legs of the inverter directly to the neutral output.

claim 21: a neutral output directly coupled to one of the legs of the inverter through an inductor ...

The Office action has cited both Johnson and Glennon with respect to the neutral output.

With regard to Johnson, Applicant traverses the Office Action characterization of Johnson. The Office Action states:

... Johnson, Jr. teaches for the purpose of reducing step voltage changes, which affect the performance of loads that it is known for a device 400, use for outputting ac and dc voltages, having a plurality of legs that one of the legs (leg 430) is connected to a neutral output N through inductor L<sub>3</sub> (see figure 4).

Although Johnson, Jr. discloses, as claimed, that one of the legs of the inverter is electrically coupled to a neutral output (see figure 1)

However, Applicant submits, as stated in Applicant's previous response, that Johnson does not describe a multi-leg inverter but instead relates to a one leg inverter 420. John describes element 410 as a first switching circuit operated as a rectifier, element 420 as a second switching circuit which is operated as an inverter, and a third switching circuit 430 operated as a balancer (column 5, lines 46-65). It is the balancer which is coupled to the neutral and not the inverter. Additionally, although Johnson references step voltage as being a problem in the background section (column 2), Johnson does not appear to teach that it is the coupling of the balancer or the

single leg inverter to the neutral which is the solution.

The Office Action Response to Arguments states:

Johnson, Jr. discloses clearly a device 400, which has several components 410, 420, 430 (column 4, lines 59—64). Anyone with ordinary skill in the art would know that an electrical device is made of several components. It is further disclosed that component 430 is also a switching device, which is used in combination with the other switches (column 8, lines 15-17, 23-28). It is further disclosed that the load, inductor L<sub>3</sub> and voltage affect the switching devices 431, 432 (column 14, lines 13-17). Clearly, the leg 430 is a very functional device in the electronic device 400 for converting voltage and clearly, leg 430 is connected to a neutral output "N" through inductor L<sub>3</sub>. Moreover, the claims do not specify what is the use of the neutral output. The claims only describe that one of the legs is connected to a neutral output through an inductor, which is exactly what Johnson, Jr. discloses.

The Remarks argued that Johnson, Jr. discloses a leg being connected to a neutral output, but such leg functions differently. The claims do not disclose any functionality of the leg being connected to a neutral output, therefore such argument is moot since there is absolutely no description, in the claims, of what is the neutral leg doing and what is the functionality of it and how it functions different from the Prior Art.

Applicant submits that, although the components of Johnson together form power converter 400 and may be described as a "device," the components do not collectively form a multi-leg inverter. Instead, they are different circuits of the power converter 400 with one of them (420) appearing to operate as a single phase inverter and another (430) having the balancing function for the power converter.

With regard to Glennon, as stated in Applicant's previous response, Applicant submits that Glennon does not include a leg coupled directly to the neutral. More particularly, it is not coupled through an inductor. The Office Action states: "Glennon has been further cited, for the purpose of preventing returns of regenerative currents develop by the load that it is well known in the art to have a fourth leg inverter (elements Q7, Q8) being coupled to a neutral via neutral bus line 30." Applicant continues to traverse this statement on the grounds that bus line 30 of Glennon is not coupled to ground. Instead, bus line 30 couples switches Q7 and Q8 to bus filter 14 (the DC link) which is in turn coupled to DC source 10 which itself is grounded. The voltage on the right hand side of bus filter 14 is different than that on the left, and there is no inverter leg coupled to a neutral. Furthermore, with respect to claim 1, Applicant does not see any way that the Glennon inverter could be described as one that "generates a neutral output."

The Office Action Response to Arguments states:

With respect to the Glennon reference, again, it is pointed out that such reference was cited for showing that it is well known in the art to have a leg of an inverter being grounded or connected to a neutral output. As shown in figure 1, switches Q7, Q8 are connected to bus "neutral bus line 30" (column 3, line 25). The Remarks sent argued that such switches are not connected to a neutral output, yet the reference discloses very clearly that bus line 30 is a neutral bus line. Are there two different types of neutral outputs? Why neutral bus line 30 would not be a neutral bus line? How is the node between switches Q7 and Q8 not connected to the neutral bus line 30? Figure 4, clearly shows that the nodes connecting the neutral bus line 30 is grounded. Why would the sources 10 be grounded and not the neutral bus line 30 when it is clearly shown in figure 2 that it is? How can a grounded node, connected to a bus line, in this case bus line 30, not be grounded? Is the node ignoring neutral bus line 30 so that it is not neutral, even though the reference clearly discloses that it is a neutral bus line? Is that possible?

Applicant submits that even if the name of bus line 30 is a "neutral bus line," the recitation of an inductor directly

coupling a leg of a multi-leg inverter to a neutral output is not taught or suggested. Instead the coupling is through bus filter 14 and AC power source 10 to a neutral.

Therefore, Applicant respectfully submits that, even if the three references were combined, a prima facie case of obviousness is not present for claims 1 and 21 because the applied references do not teach, suggest, or disclose (either individually or in combination) the recitations of independent claims 1 and 21 and of dependent claims 2-3, 5-7, 9, 13, 22, and 26 which depend from one of the aforementioned independent claims.

The remaining dependent claims 4, 8, 10-12, 14-15, and 23-24 were each rejected under 35 USC 103(a) on Takakado, Johnson, and Glennon in view of other references directed to aspects other than the neutral output. Claims 4, 8, 10-12, 14-15, and 23-24 are likewise believed to be in condition for allowance regardless of whether the other references describe the other aspects.

In Summary, Applicant respectfully requests that a timely Notice of Allowance be issued in this case. Should the Examiner believe that anything further is needed to place the application in even better condition for allowance, the Examiner is requested to contact applicant's undersigned representative at the telephone number below.

Respectfully submitted,

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